

(b) The safe working load of gear as specified in §§ 1915.112 and 1915.113 shall not be exceeded.

§ 1915.112 Ropes, chains and slings.

The provisions of this section shall apply to ship repairing, shipbuilding and shipbreaking.

(a) *Manila rope and manila rope slings.*

(1) Table G-1 in § 1915.118 shall be used to determine the safe working load of various sizes of manila rope and manila rope slings at various angles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Wire rope and wire rope slings.* (1) Tables G-2 through G-5 in § 1915.118 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than five (5) is maintained.

(2) Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

(3) Where U-bolt wire rope clips are used to form eyes, Table G-6 in § 1915.118 shall be used to determine the number and spacing of clips. The U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.

(4) Wire rope shall not be secured by knots.

(c) *Chains and chain slings.* (1) Tables G-7 and G-8 in § 1915.118 shall be used to determine the working load limit of various sizes of wrought iron and alloy steel chains and chain slings, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products.

(2) All sling chains, including end fastenings, shall be given a visual inspection before being used on the job. A thorough inspection of all chains in use shall be made every 3 months. Each chain shall bear an indication of the month in which it was thoroughly in-

spected. The thorough inspection shall include inspection for wear, defective welds, deformation and increase in length or stretch.

(3) Interlink wear, not accompanied by stretch in excess of 5 percent, shall be noted and the chain removed from service when maximum allowable wear at any point of link, as indicated in Table G-9 in § 1915.118, has been reached.

(4) Chain slings shall be removed from service when, due to stretch, the increase in length of a measured section exceeds five (5) percent; when a link is bent, twisted or otherwise damaged; or when raised scarfs or defective welds appear.

(5) All repairs to chains shall be made under qualified supervision. Links or portions of the chain found to be defective as described in paragraph (c)(4) of this section shall be replaced by links having proper dimensions and made of material similar to that of the chain. Before repaired chains are returned to service, they shall be proof tested to the proof test load recommended by the manufacturer.

(6) Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding six months when recommended by the manufacturer. The chain manufacturer shall be consulted for recommended procedures for annealing or normalizing. Alloy chains shall never be annealed.

(7) A load shall not be lifted with a chain having a kink or knot in it. A chain shall not be shortened by bolting, wiring or knotting.

[47 FR 16986, Apr. 20, 1982, as amended at 67 FR 44543, July 3, 2002]

EFFECTIVE DATE NOTE: At 76 FR 33609, June 8, 2011, § 1915.112 was amended by revising paragraphs (a), (b)(1), (b)(3), (c)(1), and (c)(3), effective July 8, 2011. For the convenience of the user, the revised text is set forth as follows:

§ 1915.112 Ropes, chains, and slings.

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(a) *Manila rope and manila-rope slings.* Employers must ensure that manila rope and manila-rope slings:

(1) Have permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load for the type(s)

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of hitch(es) used, the angle upon which it is based, and the number of legs if more than one;

(2) Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer; and

(3) Not be used without affixed and legible identification markings as required by paragraph (a)(1) of this section.

(b) *Wire rope and wire-rope slings.* (1) Employers must ensure that wire rope and wire-rope slings:

(i) Have permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load for the type(s) of hitch(es) used, the angle upon which it is based, and the number of legs if more than one;

(ii) Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer; and

(iii) Not be used without affixed and legible identification markings as required by paragraph (b)(1)(i) of this section.

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(3) When U-bolt wire rope clips are used to form eyes, employers must use Table G-1 in §1915.118 to determine the number and spacing of clips. Employers must apply the U-bolt so that the “U” section is in contact with the dead end of the rope.

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(c) *Chain and chain slings.* (1) Employers must ensure that chain and chain slings:

(i) Have permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load for the type(s) of hitch(es) used, the angle upon which it is based, and the number of legs if more than one;

(ii) Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer; and

(iii) Not be used without affixed and legible identification markings as required by paragraph (c)(1)(i) of this section.

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(3) Employers must note interlink wear, not accompanied by stretch in excess of 5 percent, and remove the chain from service when maximum allowable wear at any point of link, as indicated in Table G-2 in §1915.118, has been reached.

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§ 1915.113 Shackles and hooks.

The provisions of this section shall apply to ship repairing, shipbuilding and shipbreaking.

(a) *Shackles.* (1) Table G-10 in §1915.118 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than (5) is maintained.

(b) *Hooks.* (1) The manufacturer’s recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer’s recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain and keep readily available a certification record which includes the date of such tests, the signature of the person who performed the test and an identifier for the hook which was tested.

(2) Loads shall be applied to the throat of the hook since loading the point overstresses and bends or springs the hook.

(3) Hooks shall be inspected periodically to see that they have not been bent by overloading. Bent or sprung hooks shall not be used.

[47 FR 16986, Apr. 20, 1982, as amended at 51 FR 34562, Sept. 29, 1986]

EFFECTIVE DATE NOTE: At 76 FR 33609, June 8, 2011, §1915.113 was amended by revising paragraph (a), effective July 8, 2011. For the convenience of the user, the added and revised text is set forth as follows:

§ 1915.113 Shackles and hooks.

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(a) *Shackles.* Employers must ensure that shackles:

(1) Have permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load;

(2) Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer; and